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EXAMINER

LYONS, MICHAEL A

ART UNIT PAPER NUMBER

2877

DATE MAILED: 05/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/972,896

Applicant(s)

MCGUIRE, BRIAN

Examiner

Michael A. Lyons

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-10 and 12-14 is/are allowed.
- 6) ☒ Claim(s) 1-7 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kyrakis (4,589,070).

Regarding claims 1 and 11, Kyrakis (abstract) discloses a method where a laser is pulsed into the atmosphere from an aircraft, reflections are measured from a pair of distances in front of the aircraft, and, after a processing of the reflected responses in a microprocessor (element 54, Figure 3), determines a windshear condition in front of an aircraft if there is a large difference in the measured velocities at each distance in front of the craft.

Kyrakis, however, fails to disclose the predetermined different distances in front of the aircraft being "greater than 200 meters away from the aircraft" as claimed.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the measurements of Kyrakis all be greater than 200 meters from the aircraft, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

As for claim 2, Kyrakis fails to disclose the use of a global positioning system. Official Notice is taken, however, as to the use of a global positioning system for position determination

and other necessary functions being well known; therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add a global positioning system to the device of Kyrazis to assist in position determination of the aircraft.

As for claim 3, the laser is a single pulsed carbon dioxide laser (abstract).

As for claim 4, Kyrazis discloses the determination of Doppler shifted frequency (column 5, lines 45-50). However, no Mach-Zehnder interferometer is disclosed, but the use of such an interferometer is a matter of design choice, as the use of such an interferometer will achieve the same result, the measurement of the Doppler shifted frequency, as already occurs in the Kyrazis device.

As for claim 5, the RAM 56 of processor 54 stores the information being processed.

As for claim 6, a complete measurement of the wind velocities may be made in "7.21 microseconds", allowing repetition of the method at intervals of less than ten seconds (Column 7, lines 7-10).

As for claim 7, the abstract of Kyrazis states "both close to the aircraft and at a considerable distance such as one-half mile or a mile away from the aircraft".

Allowable Subject Matter

Claims 8-10 and 12-14 are allowed in view of the prior art.

The following is a statement of reasons for the indication of allowable subject matter:

As to claims 8 and 12, the prior art of record, taken alone or in combination, fails to disclose or render obvious the elements in combination of the claimed system of using wind velocity to detect a windshear or other dangerous condition in the atmosphere in front of an aircraft, in combination with the rest of the limitations of the above claims.

Regarding claims 8, 12, and 14, the prior art fails to disclose or render obvious the use of a pair of Mach-Zehnder interferometers as the first and second comparison means for comparing the delayed optical pulses with the backscattered light in order to make the windshear measurements, along with the corresponding method of claim 14, in combination with the rest of the elements and limitations of the associated claims.

Regarding claims 10 and 13, the prior art fails to disclose or render obvious the use of a means to provide a third light beam as a sample of the first beam along with a module to delay the third beam to correspond to the amount of time for the rest of the light in the system to travel through the system, in combination with the rest of the elements and limitations of the associated claims.

Response to Arguments

Applicant's arguments filed February 17, 2004 have been fully considered but they are not persuasive. The applicant's arguments focused upon claims 1 and 2 in the instant application. Regarding claim 1, the thrust of the argument focuses on the use of only a pair of measurements, one close to the aircraft and one a kilometer or more away from the aircraft, in the Kyrazis patent. The distance used for close to the aircraft is 10 meters as found in the example in Column 5, lines 19-20. This distance is merely an extreme example of the functionality of the Kyrazis method; as stated in the rejection above, it is obvious to one of ordinary skill in the art to find an optimum working distance in front of the aircraft for more accurate detection of the atmospheric conditions. Additionally, even though there are only two explicit measurements taken by the Kyrazis method, this does meet the "at least two" predetermined distances limitation in the claim, as the pulsed laser taking measurements in

conjunction with the moving airplane would generate a series of measurements, while any air external to the aircraft denotes a remote atmosphere for the aircraft.

With regard to claim 2, when the Kyrazis patent was issued (1986), the use of global positioning system (GPS) devices was not common. Naturally, there would be no explicit motivation in the disclosure to use a GPS device to aid in plane location and other functions. However, with the prevalent use of GPS systems in current day devices, the combination of a GPS system with an older method and device for enhanced functionality would be obvious.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Lyons whose telephone number is 571-272-2420. The examiner can normally be reached on Monday thru Thursday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MAL
April 28, 2004

A handwritten signature in black ink, appearing to read 'Samuel A. Turner', with a stylized flourish at the end.

Samuel A. Turner
Primary Examiner